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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,753	09/29/2003	Kevin P. Wright	03AB140/ALBRP328US	1468

7590 10/17/2006  
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EXAMINER
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BARBEE, MANUEL L

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/673,753	WRIGHT ET AL.	
	Examiner	Art Unit	
	Manuel L. Barbee	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-19 and 27-32 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 20-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. (US Patent No. 6,178,362) in view of Schienbein et al. (US Patent No. 6,738,692).

With regard to a plurality of sensors associated with one or more loads, as shown in claim 1, Woolard et al. teach receiving meter data from meters in a facilities (col. 3, line 61 - col. 4, line 6; col. 5, lines 1-29; col. 5, line 45 - col. 6, line 22). With regard to a load control component that has a waveform analyzer component that receives data from the sensors and determines power data that is utilized to determine the rate of energy distributed to the load, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22).

Woolard et al. do not teach that the load control component regulates the rate of energy utilized by the load, as shown in claim 1. Schienbein et al. teach a power controller to control power quality and power flow (col. 2, line 63 - col. 3, line 8). It would have been obvious to one of ordinary skill in the art at the time the invention was

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made to modify the energy management system, as taught by Woolard et al., to include a power controller, as taught by Schienbein et al., because then energy control would have been automatic (Woolard et al., col. 1, lines 5-8).

Woolard et al. do not teach that the control component and the waveform analyzer component are connected and communicate via a backplane, as shown in claim 2, or an input component that converts input signals to backplane signals, as shown in claim 6. Schienbein et al. teach an energy management system that uses a backplane to connect components (col. 4, lines 39-51). Schienbein et al. teach converting signals on the backplane (col. 8, line 7 - col. 9, line 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane and converting signals to backplane signals, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

With regard to the load control component communicating with other load control components to determine a load control strategy, as shown in claim 7, Woolard et al. teach the energy management system includes a central server in communication with other servers (col. 7, line 26 - col. 8, line 25). With regard to determining the control strategy based upon data captured by the plurality of sensors, as shown in claim 8, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22). With regard to collecting

data relating to the health of the load and using data to determine power data, as shown in claims 9 and 10, Woolard et al. teach an energy manager that tracks energy usage and finds trends and performs load shape analysis (functions of a waveform analyzer) and generates energy rate scenarios using the data (col. 5, line 45 - col. 6, line 22).

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. as applied to claim 2 above, and further in view of Holle et al. (US Patent Application Publication 2004/0150384).

Woolard et al. and Schienbein et al. teach all the limitations of claim 2 upon which claims 3 and 4 depend. Woolard et al. and Schienbein et al. do not teach a printed circuit board (PCB) with the waveform analyzer, a processor and memory, as shown in claims 3 and 4. Holle et al. teach a measurement module that measures power data and calculates energy consumption and includes a printed circuit board with a processor and memory (pars. 69, 70; Fig. 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Woolard et al. and Schienbein et al., to include a PCB with a processor and a memory, as taught by Holle et al., because then the measurement module would have been easily connected or disconnected for enhancement in the measurement module (Holle, et al., pars. 16, 17).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woolard et al. in view of Schienbein et al. and Holle et al. as applied to claim 4 above, and further in view of Ehlers et al. (US Patent Application Publication 2001/0010032).

Woolard et al., Schienbein et al. and Holle et al. teach all the limitations of claim 4 upon which claim 5 depends. Woolard et al., Schienbein et al. and Holle et al. do not teach that the processor time stamps the data as it is received and stores it in memory, as shown in claim 5. Ehlers et al. teach storing energy data with a timestamp (pars. 72, 74). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Woolard et al., Schienbein et al. and Holle et al. to include a timestamp for data, as taught by Ehlers et al., because then energy management based on demand that depends on the time of day would have been facilitated (Ehlers et al., pars. 3-5).

5. Claims 20, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers et al. in view of Schienbein et al.

With regard to receiving data from one or more sensors associated with one or more loads, as shown in claim 20, Ehlers et al. teach a plurality of load sensing modules (par. 58). With regard to time-stamping and storing the data from the sensors, as shown in claim 20, Ehlers et al. teach storing the data with a time stamp (pars. 72, 74). With regard to utilizing the time stamped data and energy algorithms to meter a load, as shown in claim 20, Ehlers et al. teach producing a meter table with the measured data (pars. 73, 74).

Ehlers et al. do not teach transferring the data to a backplane device, as shown in claim 20. Schienbein et al. teach an energy management system that uses a backplane to connect components (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy

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management system, as taught by Ehlers et al., to include a backplane, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

With regard to determining total energy consumed by a load of a given period, as shown in claim 22, Ehlers et al. teach determining energy consumption (par. 74). With regard to measuring a power factor, as shown in claim 24, Ehlers et al. teach determining a power factor (par. 69). With regard to a computer readable medium with computer executable instructions, as shown in claim 26, Ehlers et al. teach a computer with software for energy management (par. 58).

Woolard et al. do not teach a backplane device that is a waveform analyzer device on a removable circuit board, as shown in claim 25. Schienbein et al. teach a backplane with connections for energy management and power conversion modules (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Woolard et al., to include a backplane with connections for energy management and power conversion modules, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers et al. in view of Schienbein et al. as applied to claim 20 above, and further in view of Hart (US Patent No. 5,995,911).

Ehlers et al. and Schienbein et al. teach all the limitations of claim 20 upon which claim 21 depends. Ehlers et al. and Schienbein et al. do not teach that sensed data is limited to volts, amperes and watts, as shown in claim 21. Hart teaches measuring only volts and amperes from which watts can be easily calculated (col. 5, lines 17-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Ehlers et al. and Schienbein et al., to include measuring only volts and amperes, as taught by Hart, because then fewer sensors and measurement hardware would have been needed.

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlers et al. in view of Schienbein et al. as applied to claim 20 above, and further in view of Hubbard et al. (US Patent No. 6,094,622).

Ehlers et al. and Schienbein et al. teach all the limitations of claim 20 upon which claim 23 depends. Ehlers et al. and Schienbein et al. do not teach measuring harmonic distortion, as shown in claim 23. Hubbard et al. teach measuring harmonic distortion (col. 4, line 58 - col. 5, line 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management combination, as taught by Ehlers et al. and Schienbein et al., to include measuring harmonic distortion, as taught by Hubbard et al., because then power consumption would have been better characterized and controlled.

***Allowable Subject Matter***

8. Claims 11-19 and 27-32 are allowed.



9. The following is a statement of reasons for the indication of allowable subject matter: None of the cited prior art teaches a machine load metering and management system that includes a plurality of sensors associated with one or more machines; and a programming logic controller (PLC) that collects data captured by the plurality of sensors and determines and regulates the power to be distributed to one or more machines based at least in part upon metered data generated by a waveform analyzer component utilizing the data captured by the plurality of sensors, as shown in claim 11. Particularly, as shown in Applicant's reply, received 9 August 2006, neither Forth et al. nor Wilson et al. teach using data generated by a waveform analyzer in a PLC.

None of the cited prior art teaches a method for monitoring and managing loads that includes, retrieving load data from one or more sensing devices; deriving energy data using a microprocessor located on a printed circuit board inserted in a slot on a backplane and the load data received from the sensing devices; determining a load control strategy based at least in part on the derived energy data; and controlling loads according to the control strategy, as shown in claim 27. Particularly, neither, Woolard et al., Schienbein et al. nor Holle et al. teach deriving energy data using a microprocessor located on a printed circuit board inserted in a slot on a backplane.

### ***Response to Arguments***

10. Applicant's arguments filed 9 August 2006 have been fully considered but they are not persuasive.

With regard to claim 1, Applicant states that the cited passages of Woolard et al. merely disclose measuring of energy data from utility meters in the facility and do not teach or suggest a plurality of sensors associated with one or more loads. Woolard et al. teach meters that measure the electrical energy usage, which would require sensors (Woolard et al., col. 5, line 45 - col. 6, line 22). The energy usage is tracked for specific loads, facilities and consumers so the sensors are associated with one or more loads.

With regard to claim 20, Applicant states that teachings in Ehlers et al. for recording data with time is not the same as time-stamping the data from the individual sensors as it arrives, as claimed. Ehlers et al. teach storing the data with a time stamp (pars. 72, 74). The data is stored with time data and the time would have to be known at the time the data is detected. Applicant further states that the mere tabulation of data is not equivalent to executing energy algorithms, as shown in claim 20. Since the data is related to energy, and processing is required to store the data in a specific format, the Examiner's position is that recording the data in a specific manner is an energy process or algorithm. Applicant states that there is nothing in Schienbein et al. to suggest how a backplane could be adapted into an energy analysis system for energy management and building automation as disclosed by Ehlers et al. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the energy management system, as taught by Ehlers et al., to include a backplane, as taught by Schienbein et al., because then management of dispersed power generation would have been facilitated (Schienbein et al. col. 1, line 42 - col. 2, line 10).

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

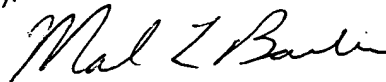
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Manuel L. Barbee  
Examiner  
Art Unit 2857

mlb  
October 13, 2006